Westmorland or land of the western boundaries. Westmorland and Cumberland are not mentioned in the Doomsday book. They were made in later times. The Roman occupation of Westmorland lasted 500 years. About the middle of the fifth century, 449 A.D., the Saxons invaded Britain, but Westmorland was left undisturbed. It did not form part of the Saxon Heptarchy, but was part of the Welsh kingdom of Strathclyde, which extended from the Clyde to the Dee. It was not conquered by the Saxons, and continued to be held by the remaining British inhabitants of the country. In 607, Ethelfrith, King of Northumbria, defeated the Welsh at Chester, and annexed part of the present counties of Lancashire and Westmorland, thus dividing the Welsh of Wales from those of Strathclyde. The southern part of Westmorland became part of Northumbria. In the ninth century the Danes invaded England, and the district suffered considerably from their ravages. In 901, Edward the Elder came to the throne, and was subsequently recognised as overlord by the Britons of Strathclyde and by the Scotch. After his death, Athelstan carried on a war against them, which was brought to a close by the Peace of Dacre. Later Strathclyde was held as a fief by the King of Scotland. Cumbria then began to be spoken of, but not Westmorland. The Danes burnt Carlisle, the ruins of which stood for 200 years, inhabited only, it is said, by a few Jews. After the Norman Conquest, William Rufus took possession of Carlisle. Strathclyde then became English, and was given into the hands of Earls, and called the land of Carlisle. This arrangement proved rather unsatisfactory, the barons giving a good deal of trouble, and finally, in Henry I. reign, the counties of Cumberland and Westmorland were made. Westmorland consisted of the baronies of Appleby and Kendal.

There are still remains of several castles built by William Rufus, *e.g.*, Brougham, Brough, and Appleby.

L. E. C.

MATHEMATICAL MYSTERIES.

Let your victim write down any number of three figures, not seen by you, as: 976, then tell him to reverse the figures: 679, and subtract the smaller of the two from the bigger—

976
679

297

Then ask him to tell you the unit, and you can tell him the whole number, as the middle figure will always be 9 and the other two make 9 together.

Another puzzle is: Let the other person write down any row of figures not seen by you, as: 174825, then say: now add up the figures, and what you get subtract from it. In this case they add up to 27, and 174825 - 27 leaves 174798. Now say: Cross out any one of the figures and tell me those that are left, and I will tell you what you crossed out. Let us say the 7 is crossed out, and as you get told 17498 are left, you add them up quickly. To make it easier you can leave out the 9, and say to yourself, 1 + 7 + 4 + 8 = 20, and you can tell a 7 is crossed out, as 7 is wanted to make 9 go into it. However, you might be puzzled if the 9 were crossed out instead of the 7, as it might be a 9 or a 0. In this case you say 9, and if you are told it is wrong, admit a mistake and say 0.

A great deal of fun may be got by asking a person to write down eleven thousand eleven hundred and eleven, as quickly as possible. They will begin by writing the figure 1 again and again and then try a 0 between, and it is remarkable how few think of writing 12111. I have seen even gentlemen puzzled by this.

A desire to please and interest children when doing simple multiplication sums is to ask them which is their favourite figure. Suppose they say 4, then put down 12345679, and for the multiplier take their favourite figure multiplied by 9 (in this case 36) and the answer will come in all 4's. Whatever figure they choose multiply it by 9, and if they choose 1 let them simply multiply the multiplicant by 9. Notice that the 8 is omitted in the multiplicant.

The figure 7 is also mysteriously contained without a remainder in any number consisting of three figures repeated as: 7)348348 or: 7)643643

49764 91949

The number 37 if multiplied by 3 or any multiple of 3 always gives the same figure three times in the answer, as:

37 or 37
9 24
333 148
74
888

This holds good up to 27. From 27 to 54 the middle figures are the same; the two outside ones make together the same as:

37
48
296
148
1776

A very peculiar number is 142857. If multiplied by any of the first six digits it gives the same figures in the same order, only starting with different figures, as—

142857 142857 142857
4 or 6 7
571428 857142 999999

If multiplied by 7 it makes all 9's; after 7 the result will be the same again, only the first and last figures must be added up as one.

An easier way of casting out 9's is to add up instead of dividing by 9, until you get down to a unit.

Ex. 2387465 = 35 but 3 + 5 = 8
68 = 14 ,, 1 + 4 = 5
19099720 40 = 4
14324790
162347620 = 31 ,, 3 + 1 = 4

Both come to the unit 4, which proves the sum right.

SIDE LIGHTS ON THE P.N.E.U.

FROM "PUNCH'S" POINT OF VIEW.

DOMESTIC DRAMA.

Divided Counsels.

Lady Oriflamme. Mornin' Harry. Where's Adela?

Lord Greymere (her son). Adela? Oh, she's P.N.E.U.-ing—the Proper-Nursery-Education Union, y' know. It's all the rage with the New Mothers, *alias* the Pneu-Mas. I say, Mater, don't tell Adela I called 'em that. She's tremendously in earnest about it, so far.

Lady O. But—but she knows no more about education than—than——

Lord G. Than you do. Precisely. That's just the idea. It's because you didn't educate us that we have to——

Lady O. Didn't *educate* you! Fiddlesticks! Didn't I pack you off to Eton as soon as they'd have you?

Lord G. Oh, Eton! Yes, Eton—if you call that education. They *don't*, you see, though they still send their sons there. There isn't anywhere else.

Lady O. What *do* they call education then?

Lord G. Oh—sort of thing, making 'em do what they're told, and not tell lies, and——

Lady O. Fudge! What's new in that, I'd like to know? I'm sure I've smacked you often enough for tellin' lies.

Lord G. Hah! That dear old slipper! I told 'em all about it—the Pneumatics, y' know. Adela took me to one of their meetings. Five hundred Pneu-Mas and me. I was the only man.

Lady O. You must have looked a fool!

Lord G. I did—at first. They shoved me on the platform, and asked me for a speech, by gad. So I gave 'em you and your slipper, because they don't believe in puishment, and they all said "Shame," and looked as pleased as Punch. I had to say something, 'y know.